What is claimed is:

[Claim 1] 1. A spring-biased strut (50) for a vehicular mountable cargo container (10) having a top portion (30) hinge-connected for pivotation relative to a bottom portion (32) of the cargo container, said strut comprising:

two arms (60, 70) operatively connected for pivotation relative to one another through a delimited range of motion;

a biasing spring (80) operatively interposed between said two arms, said biasing spring configured to be operationally influential on said two arms during transitions between first and second strut orientations that correspond to open and closed configurations of an incorporating vehicular mountable cargo container;

said two arms being one each connectable to said top and bottom portions of the vehicular mountable cargo container thereby enabling said strut to deliver an assisting force for urging the cargo container into the open configuration; and

said two arms configured relative to one another and the biasing spring so that across a substantial entirety of said delimited range of relative motion between said two arms, and which corresponds to a substantial entirety of relative motion between the top and bottom portions of the cargo container when transitioning between the open and closed configurations, the assisting force imparted to said cargo container acts in one rotational direction urging the vehicular mountable cargo container toward the open configuration.

[Claim 2] 2. The spring-biased strut as recited in claim 1, further comprising:

a cam surface provided at one of said two arms, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

delimiters (46, 47) configured to limit the range of relative motion between said two arms so that throughout the entire range of transitional motion of said strut between said first and second strut orientations, said operationally effective force imposed by said biasing spring between said two

arms exclusively urges one of clockwise and counter clockwise pivotation of said cam surface including arm relative to the non-cam surface including arm.

[Claim 3] 3. The spring-biased strut as recited in claim 2, further comprising:

said cam surface and said biasing spring, together with a pivot connection between said two arms establish a capability for an over-center strut orientation at which the direction of said operationally effective force imposed by said biasing spring between said two arms would change between exclusively urging said one of clockwise and counter clockwise pivotation of said cam surface including arm relative to the non-cam surface including arm, but for said delimiters.

[Claim 4] 4. The spring-biased strut as recited in claim 2, further comprising:

a force communication point (C_P) being defined by a point of support of the non-cam surface including arm on said cam-including arm at said cam surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

[Claim 5] 5. The spring-biased strut as recited in claim 1, further comprising:

a cam surface provided at one of said two arms, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

a force communication point (C_P) being defined by a point of support of the non-cam surface including arm on said cam-including arm at said cam

surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

[Claim 6] 6. The spring-biased strut as recited in claim 5, further comprising:

said line that is oriented parallel to the direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms being also oriented substantially parallel to a longitudinal axis (V_L) of the non-cam-including arm.

[Claim 7] 7. The spring-biased strut as recited in claim 1, further comprising:

said operationally effective force imposed by said biasing spring between said two arms being a summation of a plurality of vector forces imposed by said biasing spring between said two arms.

[Claim 8] 8. A vehicular mountable cargo container (10) comprising:

a top portion (30) of said vehicular mountable cargo container hinge-connected for pivotation relative to a bottom portion (32) of the cargo container between open and closed configurations;

a pair of spring-biased struts (50), each operatively interposed between said top and bottom portions of said vehicular mountable cargo container, and one each of said pair of spring-biased struts located at opposed end regions of the cargo container;

each of said pair of spring-biased struts being configured to exclusively deliver an assisting expansion force between the top and bottom portions of the cargo container for urging the container toward the open configuration.

[Claim 9] 9. The vehicular mountable cargo container (10) as recited in claim 8, wherein each of said pair of spring-biased struts is configured to avoid delivering a closing-assist force between the top and bottom portions of the cargo container that urges the container toward the closed configuration.

[Claim 10] 10. The vehicular mountable cargo container (10) as recited in claim 8, wherein each of said pair of spring-biased struts is configured to prevent delivering a closing-assist force between the top and bottom portions of the cargo container that urges the container toward the closed configuration.

[Claim 11] 11. The vehicular mountable cargo container (10) as recited in claim 8, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby urging maintenance of a parallel orientation of said top portion, relative to said bottom portion of said cargo container when transitioned by an operator between the open and closed configurations.

[Claim 12] 12. The vehicular mountable cargo container (10) as recited in claim 8, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby preventing an inducement of said top portion to torque, relative to said bottom portion of said cargo container when transitioned by an operator between the open and closed configurations.

[Claim 13] 13. The vehicular mountable cargo container (10) as recited in claim 8, further comprising:

a cam surface provided at one of said two arms, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

a force communication point (C_P) being defined by a point of support of the non-cam surface including arm on said cam-including arm at said cam surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

[Claim 14] 14. A method for providing and controlling operation of a dual sided opening roof mount cargo box (10) for a carrying vehicle, said method comprising:

providing a dual sided opening roof mount cargo box (10) having a lid portion (30) releasably hinge-connected at two lateral sides to a bottom portion (32) of said cargo box (10) for alternate pivotation at each of the two lateral sides between open and closed configurations, said bottom portion (32) being adapted to be mounted to a carrying vehicle and said lid portion (30) being manufactured from a semi-flexible material sufficiently pliable to permit two opposite end regions thereof to be at different relative distances from the bottom portion (32) of the cargo box (1) during transition between the open and closed configurations;

providing a pair of spring-biased struts (50), each operatively interposed between said lid portion (30) and said bottom portion (32) of said cargo box (10), and one each of said pair of spring-biased struts (50) being located at said two opposite end regions of said cargo box; and

imposing an expansively directed force on said lid portion (30), utilizing said pair of spring-biased struts (50), across a substantial entirety of travel of said lid portion (30) during operator induced movement from said closed configuration to said open configuration and thereby assisting the operator to smoothly open said cargo box (10).

[Claim 15] 15. The method as recited in claim 14, further comprising:

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a magnitude that substantially balances a weight of said lid portion (30) across a range of motion (T) of said lid portion (30) when operating in proximity of said closed configuration.

[Claim 16] 16. The method as recited in claim 15, wherein said control of said expansively directed force to a magnitude that substantially balances the weight of said lid portion (30) facilitates an operator's even lifting of said lid portion (30) across said range of motion (T) thereby avoiding strut-induced twist in said lid portion (30).

[Claim 17] 17. The method as recited in claim 15, further comprising:

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a magnitude that increases compared to that imposed across the range of motion (T) of said lid portion (30) when operating in proximity of said open configuration.

[Claim 18] 18. The method as recited in claim 15, further comprising:

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a substantially zero magnitude when said lid portion (30) is in said closed configuration and thereby avoiding fatigue inducement at the strut-engaging portions of the lid portion (30) and bottom portion (32) of the cargo box (10).

[Claim 19] 19. The method as recited in claim 15, wherein each of said pair of spring-biased struts (50) further comprises:

two arms (60, 70) operatively connected for pivotation relative to one another through a delimited range of motion;

a biasing spring (80) operatively interposed between said two arms (60, 70) for operational influential during transition between first and second strut

orientations that correspond to said open and closed configurations of said cargo box (10); and

said two arms (60, 70) connected, one each, to said lid and bottom portions (30, 32) of said cargo box (10) thereby enabling said strut (50) to deliver said expansively directed force for urging the cargo box (10) into the open configuration.

[Claim 20] 20. The method as recited in claim 19, wherein each of said pair of spring-biased struts (50) further comprises:

a cam surface provided at one of said two arms and thereby establishing a cam-including arm and a non-cam-including arm, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

delimiters (46, 47) configured to limit the range of relative motion between said two arms so that throughout the entire range of transitional motion of said strut between said first and second strut orientations, said operationally effective force imposed by said biasing spring between said two arms urges exclusively unidirectional pivotation of said cam-including arm relative to said non-cam-including arm.

[Claim 21] 21. The method as recited in claim 20, wherein each of said pair of spring-biased struts (50) further comprises:

a force communication point (C_P) being defined by a point of support of said non-cam-including arm on said cam-including arm at said cam surface and which moves across said cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

[Claim 22] 22. The method as recited in claim 21, wherein each of said pair of spring-biased struts (50) further comprises:

said non-cam-including arm comprising an arm body housing a spring biased slider therein, said slider being configured for relative reciprocation within said arm body and said slider presenting a reception surface for establishing a sliding point of contact with said cam surface of said cam-including arm; said sliding point of contact coinciding with said force communication point (C_P).

[Claim 23] 23. The method as recited in claim 19, wherein each of said pair of spring-biased struts (50) further comprises:

a cam surface provided at one of said two arms and thereby establishing a cam-including arm and a non-cam-including arm, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

a force communication point (C_P) being defined by a point of support of the non-cam-including arm on said cam-including arm at said cam surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

[Claim 24] 24. The method as recited in claim 23, wherein each of said pair of spring-biased struts (50) further comprises:

said non-cam-including arm comprising an arm body housing a spring biased slider therein, said slider being configured for relative reciprocation within said arm body and said slider presenting a reception surface for establishing a sliding point of contact with said cam surface of said cam-including arm; said sliding point of contact coinciding with said force communication point (C_P).

[Claim 25] 25. The method as recited in claim 24, wherein each of said pair of spring-biased struts (50) further comprises:

said line oriented parallel to the direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms being further oriented substantially parallel to a longitudinal axis (V_L) of the non-cam-including arm.

[Claim 26] 26. The method as recited in claim 19, wherein each of said pair of spring-biased struts (50) further comprises:

said operationally effective force imposed by said biasing spring between said two arms being a summation of a plurality of vector forces imposed by said biasing spring between said two arms.

[Claim 27] 27. The method as recited in claim 19, wherein each of said pair of spring-biased struts is configured to prevent the provision of a closing-assist force between said lid portion (30) and said bottom portion (32) that urges said cargo box (10) toward the closed configuration.

[Claim 28] 28. The method as recited in claim 19, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby urging maintenance of a parallel orientation of said lid portion (30), relative to said bottom portion of said cargo box (10) when transitioned by an operator between the open and closed configurations.

[Claim 29] 29. The method as recited in claim 19, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby preventing an inducement of said lid portion to torque, relative to said bottom portion of said cargo box when transitioned by an operator between the open and closed configurations.